
U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

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ZINC IN FEBRUARY 1997

Domestic mine production in February 1997, expressed in zinc content of ore, declined by 1% from the previous month's production and by more than 6% when compared to February 1996. Smelter production was nearly 4% lower than in January, but was still more than 7% higher than in February 1996. Similarly, apparent consumption in February 1997 was about 10% lower than the previous month's consumption, but was still more than 36% higher than in February 1996.

After a relatively large price increase in January, the *Platt's Metals Week* composite price for North American Special High Grade zinc rose by an even larger percentage in February. The increase was more than 7% over the previous month's price and nearly 17% higher than in February 1996. The rising price of zinc metal was a reflection of declining stocks, which, in turn, caused a large (46%) increase in monthly sales from the U.S. National Defense Stockpile.

Cominco Ltd., Vancouver, Canada, might have set a precedent for treatment charges levied by smelters to process concentrates. The current arrangement allows smelters to charge more for processing during times of declining metal prices in order to maintain the customary profit. They could also sell surplus stocks to London Metal Exchange (LME) warehouses, increasing stockpiled material and, thereby, further depressing prices. Now, "to share the pain," Cominco signed an agreement with French smelter Metaleurop S.A. where both miners and smelters experience reduced profits when LME prices are low. A benchmark treatment charge was set at \$186 per ton of metal, based on the LME cash price of \$1,100 per ton. If the LME price increases by \$1, the smelter will receive an additional 20¢; conversely, the smelter will lose 15¢ for each \$1 the price falls below \$1,100.¹

Savage Resources of Australia has decided to significantly increase the production of zinc in the United States. It will finance a feasibility study to raise the capacity of the Clarksville,

TN, smelter from about 110,000 tons to 275,000 tons per year. Savage is also planning to increase output at its nearby Gordonsville Mine by about 10%, to 41,000 tons of zinc-in-concentrate by the middle of 1997. Recently Savage bought the Gay River Mine in Nova Scotia (now renamed the Scotia Mine), and continued exploration of the Columbia Vein in western Kentucky. The company also has agreed to buy a mothballed, 450-ton-per-day flotation plant from USX, and has begun conducting fuming test work at a pilot plant to recover metal from lead-silver residues.²

According to Brian Fisher, head of the government-owned agricultural and minerals research unit, Australian mineral exports will reach \$28 billion in fiscal year 1996-97 and will grow by a further 10.5% in 1997-98. By 2000, it should reach \$34 billion, of which \$13 billion are expected to be energy exports and the remaining \$21 billion metals and other minerals. Annual capital investment in the minerals industry increased an average 13% over the last 4 years, reaching \$5.2 billion in 1995-96. Exploration expenditures during the last 4 years increased by an average of 9%, to \$1.3 billion in 1995-96.³ According to Federal Resources Minister Warwick Parer, one of the investments is the study of three new prospective areas in central western New South Wales, western Tasmania, and the Gawler Craton region in southern Australia. The Federal Government had committed to spend nearly \$1 billion over the next 4 years and expects the States and industry to make equivalent contributions.⁴

The future of the \$866 million Century Zinc project in Queensland, Australia, will now be in the hands of an arbitrator following the collapse of negotiations between RTZ-CRA and local Aboriginal people. The \$47 million compensation package offered by the company included job opportunities, funding for training and business development, interests in pastoral properties, and compensation for claimants. According

to the Native Title Act a decision about the Century Mine title, port facilities at Karumba, and the 300-kilometer pipeline corridor connecting the mine and the port must be reached in 6 months. With subsequent prompt approval by the Queensland Government, the 2-year mine development could begin in late 1997.⁵ RTZ-CRA has agreed to sell the Century Zinc Mine and the nearby Dugald River zinc deposit to Pasminco Mining Ltd. for \$269 million. Pasminco paid an initial payment of \$8 million with the balance payable upon obtaining necessary permits. The low-iron concentrate to be produced at Century could be available for use at Pasminco's Budel smelter in the Netherlands before the 2-year extension permitting the dumping of jarosite waste at the smelter expires in June 2000.

Canadian miner Cominco Ltd. has completed its previously announced purchase of 4.1 million common shares of Anvil Range Mining Corp. for \$7 million, increasing its share-holding from 1.6 million to 5.7 million shares. The transaction, completed on February 6, 1997, has been accepted by the Toronto Stock Exchange. With this new acquisition, together with expanding production of existing mines and the planned capacity increase of its two smelters, Cominco is expecting to boost production of refined zinc to 500,000 tons by 2000, according to Cominco President and CEO David Thompson.

Cominco, in joint venture with Marubeni of Japan, expects that the planned \$250 million expansion of the 100,000-ton-per-year Cajamarquilla zinc refinery, near Lima, Peru, soon will be approved. The first stage would take about 18 months and would increase capacity by about 20,000 tons. The second

stage would raise the output to 230,000 tons per year and would take about 30 months to complete. The consortium also plans to invest \$3 million in a new tailings site and treatment plant. Cajamarquilla produced 105,450 tons of 99.99% zinc in 1996, an all-time record for the refinery.⁶

Zinc oxide demand is strong worldwide, with consumption totaling about 950,000 tons per year. The largest consumer and producer is Europe with 250,000 tons and 340,000 tons, respectively. Worldwide consumption is expected to improve, because in its main application, in rubber compounding, zinc oxide is not faced with any threat from substitution materials. Total world production is about 1.2 million tons. Zinc dust, used mainly as an anticorrosion product, is also in oversupply. Annual production amounts to about 230,000 tons, outstripping the demand of 160,000 tons.⁷

¹Mining Journal. Zinc In The Limelight. V. 328, No. 8415, Feb. 7, 1997, p. 116.

²Metal Bulletin. Savage Resources To Expand U.S. Operations. No. 8151, Feb. 6, 1997, p. 5.

³———. Australian Minerals Exports To Rise Strongly. No. 8151, Feb. 6, 1997, p. 6.

⁴Mining Journal. Australian Investment... V. 328, No. 8415, Feb. 7, 1997, p. 108.

⁵Metal Bulletin. Century Zinc Goes To Arbitration After Compensation Fails. No. 8154, Feb. 17, 1997, p. 3.

⁶Platt's Metals Week. Approval Looms For Cajamarquilla Zinc Upgrade. Feb. 24, 1997, p. 5.

⁷American Metal Market. Costs, Competition Key Issues For Zinc Oxide, Dust Companies. V. 105, No. 28. Feb. 10, 1997, p. 7.

TABLE 1
SALIENT ZINC STATISTICS 1/

(Metric tons)

	1996				1997		
	February	Jan.-Feb.	Jan.-Dec. p/	December	January	February	Jan.-Feb.
Production:							
Mine, zinc content of concentrate	51,200	106,000	603,000	44,800	48,400 r/	47,900	96,400
Mine, recoverable zinc	48,900	101,000 r/	575,000	42,700	46,200 r/	45,700	92,000
Smelter, refined zinc	29,400	60,700	366,000	31,200	32,700 r/	31,500	64,200
Oxide (gross weight)	10,400	21,100	129,000	11,400	10,600	10,400	21,000
Consumption:							
Refined zinc, reported	55,600 r/	112,000 r/	661,000	53,100	47,200 r/	45,300	92,400
Ores e/ (zinc content)	150 r/	300 r/	1,800	150	150	150	300
Zinc-base scrap e/ (zinc content)	8,300 r/	16,600 r/	100,000	8,300	8,300	8,300	16,600
Copper-base scrap e/ (zinc content)	14,000 r/	28,000 r/	170,000	14,000	14,000	14,000	28,000
Aluminum- and magnesium-base scrap e/ (zinc content)	67 r/	134 r/	800	67	67	67	134
Total e/	78,100 r/	157,000 r/	933,000	75,600	69,700 r/	67,800	137,000
Apparent consumption, metal 2/	82,900 r/	175,000 r/	1,210,000	117,000 r/	126,000 r/	113,000	239,000
Stocks of refined (slab) zinc, end of period:							
Producer 3/	8,610 r/	XX	XX	13,700	14,500 r/	15,500	XX
Consumer 4/	67,700 r/	XX	XX	55,700 r/	56,000 r/	58,500	XX
Merchant	6,010	XX	XX	4,800	5,300 r/	5,040	XX
Total	82,300 r/	XX	XX	74,200 r/	75,800 r/	79,000	XX
Shipments of zinc metal from Government Stockpile	830	1,460	16,500	2,110	3,020	4,400	7,420
Imports for consumption:							
Refined (slab) zinc	53,600	120,000	827,000	79,000	92,100	NA	92,100 5/
Oxide (gross weight)	5,450	10,300	56,300	4,190	4,410	NA	4,410 5/
Ore and concentrate (zinc content)	243	271	15,100	2,450	2,730	NA	2,730 5/
Exports:							
Refined (slab) zinc	43	53	1,970	132	280	NA	280 5/
Oxide (gross weight)	474	1,230	5,770	410	371	NA	371 5/
Ore and concentrate (zinc content)	4,750	8,950	425,000	44,600	8,660	NA	8,660 5/
Waste and scrap (gross weight)	3,880	8,310	45,500	3,310	2,780	NA	2,780 5/
Price:							
London Metal Exchange, average, per metric ton	\$1,036.17	\$1,027.62	\$1,025.03	\$1,036.26	\$1,086.52	\$1,179.38	\$1,132.95
Platt's Metals Week North American Special High Grade, average, ¢ per pound	50.69	50.64	51.11	52.77	55.17	59.26	57.22

e/ Estimated. p/ Preliminary. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

3/ Data from U.S. Geological Survey and American Bureau of Metal Statistics.

4/ Includes an estimate for companies that report annually.

5/ Includes data for January only. February data not available at time of publication.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES 1/

(Metric tons)

Month	Beginning stocks 2/	Production	Shipments	Ending stocks 2/
1996:				
Jan.-Feb.	XX	60,700	59,200	XX
February	8,990	29,400	29,800	8,610
March	8,610	30,400	31,100	7,860
April	7,860	29,800	29,400	8,280
May	8,280	30,500	30,800	8,040
June	8,040	30,400	30,300	8,130
July	8,130	30,800	30,100	8,830
August	8,830	27,400	26,300	9,920
September	9,920	30,800	29,700	11,100
October	11,100	32,300	31,400	11,900
November	11,900	32,000	29,700	14,200
December	14,200	31,200	31,800	13,700
Total p/	XX	366,000	360,000	XX
1997:				
January	13,700	32,700 r/	31,900 r/	14,500 r/
February	14,500	31,500	30,500	15,500
Jan.-Feb.	XX	64,200	62,400	XX

p/ Preliminary. r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3
ZINC OXIDE PRODUCED 1/ IN THE UNITED STATES 2/

(Metric tons, gross weight)

Month	Beginning stocks	Production	Shipments	Ending stocks
1996:				
Jan.-Feb.	XX	21,100	25,000	XX
February	4,760	10,400	12,000	3,100
March	3,100	12,200	11,500	3,740
April	3,750	11,400	11,600	3,530
May	3,530	11,200	11,400	3,390
June	3,390	10,300	9,920	3,800
July	3,800	9,100	9,560	3,340
August	3,340	9,870	10,200	3,060
September	3,060	10,100	9,830	3,210
October	3,320	11,100	11,100	3,260
November	3,260	11,100	11,100	3,240
December	3,240	11,400	11,100	3,540
Total p/	XX	129,000	132,000	XX
1997:				
January	3,540	10,600	10,900	3,250
February	3,250	10,400	10,300	3,290
Jan.-Feb.	XX	21,000	21,200	XX

p/ Preliminary. XX Not applicable.

1/ Excludes impure zinc oxide produced from other processes.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4
ESTIMATED DISTRIBUTION 1/ OF ZINC OXIDE SHIPMENTS BY INDUSTRY 2/ 3/

(Metric tons, gross weight)

Industry	1996				1997		
	February	Jan.-Feb.	Jan. Dec. p/	December	January	February	Jan.-Feb.
Agriculture	W	W	W	W	W	W	W
Ceramics	488	889	5,710	454	431	437	868
Chemicals	2,660	5,520	28,900	2,570	2,390	2,240	4,630
Paints	465	928	4,340	308	320	298	619
Photocopying	W	W	W	W	W	W	W
Rubber	7,960	16,500	87,500	7,240	7,250	6,900	14,100
Other	476	1,100	5,760	503	485	447	931
Total	12,000	25,000	132,000	11,100	10,900	10,300	21,200

p/ Preliminary. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Distribution of U.S. producers only. Imports excluded because distribution by industry cannot be distinguished.

2/ May include in-house consumption.

3/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 5
APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO INDUSTRY USE AND PRODUCT 1/

(Metric tons)

Industry and product	1996				1997		
	February r/	Jan.-Feb. r/	Jan.-Dec. p/	December r/	January r/	February	Jan.-Feb.
Galvanizing:							
Sheet and strip	33,800	70,600	494,000	47,900	52,500	47,200	99,700
Other	9,400	20,700	160,000	17,100	18,800	16,500	35,300
Total	43,200	91,400	654,000	65,000	71,300	63,800	135,000
Brass and bronze	10,100	20,900	155,000	14,300	17,300	15,100	32,400
Zinc-base alloy	15,500	32,200	229,000	21,000	22,600	19,300	41,900
Other uses 2/	14,100	30,900	172,000	16,800	15,000	14,800	29,800
Total	82,900	175,000	1,210,000	117,000	126,000	113,000	239,000

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes zinc used in making zinc dust, wet batteries, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, zinc oxide, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 6
AVERAGE MONTHLY ZINC PRICES

Month	North American Special High Grade, ¢/lb.	LME cash	
		¢/lb.	\$/m.t.
1996:			
February	50.69	46.98	1,036.17
March	51.24	48.26	1,064.29
April	50.61	47.42	1,045.73
May	50.50	46.98	1,036.14
June	49.57	45.75	1,008.85
July	49.87	45.36	1,000.39
August	51.26	45.67	1,007.24
September	51.39	45.37	1,000.64
October	51.52	45.50	1,003.46
November	53.31	47.47	1,046.83
December	52.77	47.00	1,036.26
Year average	51.11	46.50	1,025.03
1997:			
January	55.17	49.28	1,086.52
February	59.26	53.50	1,179.38

Source: Platt's Metals Week.

TABLE 7
U.S. EXPORTS OF ZINC 1/

Material	1996		1997 2/	
	Quantity (metric tons)	Value (thousands)	January	
			Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	1,970	\$2,350	280	\$323
Ore and concentrate (zinc content)	425,000	190,000	8,660	2,650
Waste and scrap (gross weight)	45,500	30,300	2,780	2,010
Powders , flakes, and dust (zinc content)	11,100	21,400	631	1,220
Oxide (gross weight)	5,770	9,430	371	447
Chloride (gross weight)	1,470	1,230	351	219
Sulfate (gross weight)	5,230	2,970	238	144
Compounds, other (gross weight)	1,250	4,670	30	105

NA Not available.

1/ Data are rounded to three significant digits.

2/ February data were not available at time of publication.

Source: Bureau of the Census.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF ZINC 1/

Material	1996		1997 2/	
	Quantity (metric tons)	Value (thousands)	January	
			Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	827,000	\$882,000	92,100	\$97,900
Ore and concentrate (zinc content)	15,100	6,380	2,730	1,160
Waste and scrap (gross weight)	31,900	12,800	2,080	843
Powders , flakes, and dust (zinc content)	10,300	17,600	659	1,060
Oxide (gross weight)	56,300	57,500	4,410	4,720
Chloride (gross weight)	2,420	2,140	100	104
Sulfate (gross weight)	4,050	2,840	444	239
Compounds, other (gross weight)	1,190	1,280	117	146

NA Not available.

1/ Data are rounded to three significant digits.

2/ February data were not available at time of publication.

Source: Bureau of the Census.

TABLE 9
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE
STOCKPILE 1/

(Metric tons)

Month	Beginning inventory	Shipments	Ending inventory
1996:			
February	273,000	830	272,000
March	272,000	--	272,000
April	272,000	1,220	271,000
May	271,000	--	271,000
June	271,000	1,430	270,000
July	270,000	1,870	268,000
August	268,000	1,460	266,000
September	266,000	2,550	264,000
October	264,000	1,630	262,000
November	262,000	2,810	259,000
December	259,000	2,110	257,000
Total	XX	16,500	XX
1997:			
January	257,000	3,020	254,000
February	254,000	4,400	250,000
Jan.-Feb.	XX	7,420	XX

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Defense Logistics Agency.

TABLE 10
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY 1/ 2/

(Metric tons)

Material and country	General imports		Imports for consumption	
	1996	1997	1996	1997
		January		January
Ore and concentrate (zinc content):				
Mexico	7,000	2,730	6,970	2,730
Peru	10,000	--	8,080	--
Other	322	--	91	--
Total	17,300	2,730	15,100	2,730
Blocks, pigs, or slab:				
Brazil	32,000	4,160	32,000	4,160
Canada	503,000	42,300	503,000	42,300
Finland	18,300	5,000	18,300	5,000
Mexico	93,900	6,350	93,900	6,350
Peru	23,800	2,500	23,800	2,500
Russia	24,100	1,150	24,100	1,150
Spain	83,200	15,000	91,400	16,000
Other	40,500	14,600	40,900	14,600
Total	819,000	91,100	827,000	92,100
Dross, ashes, & fume (content)	15,800	1,300	15,800	1,300
Grand total	852,000	95,200	858,000	96,200
Oxide (gross weight):				
Canada	28,600	2,700	28,600	2,700
China	2,070	46	2,070	46
Mexico	21,400	1,390	21,400	1,390
Other	4,420	276	4,310	276
Total	56,400	4,410	56,300	4,410
Other (gross weight):				
Waste and scrap	31,900	2,080	31,900	2,080
Sheets	16,900	1,870	16,900	1,870
Dust, powder, flakes	10,300	659	10,300	659

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ February data were not available at time of publication.

Source: Bureau of the Census.